ACC NR; AP6003935		CODE: UR/C	0374/65/000	/005/0003/0012
AUTHOR: Sukhareva, L. Ye. (Moscow); K Vorontsova, O. I.	L. A. (Honcov)			
ORG: none		(
TITLE: Investigati	on of elestomers	on the bas	is of lina	ry and ternary
SOURCE: Mekhanika TOPIC TAGS: elasto	polimerov, no. 5	. 1965, 3-1	2	
ABSTRACT: Physicom on the basis of bin polyamide, polyviny The binary and term were chosen on the longus change of physicalio of the PVC and to chemical interact	echanical and the ary and ternary I chloride (PVC) ary systems with basis of composit sicomechanical pr	ermophysica systems with , and rubber optimal phy tion proper coperties of	l propertie in difference r have been psicomechan ty diagrams f filmsbuff observed an	of clastomers ratios of investigated. ical properties A nonmonote is a certain d is ascribed

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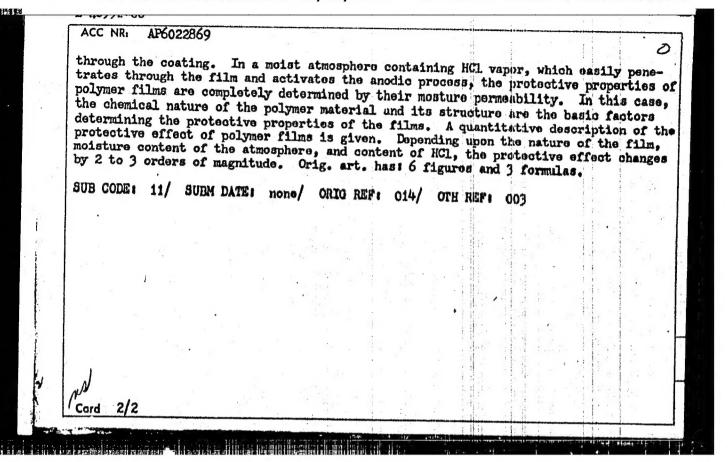
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	ation with binary systems. Orig. [Based on author's abstract].	Are,	indo:	res and ;	
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26116-66 EXT(0)/SWP(v)/EXP(1)/T LIP(6) QC(4)
ACC NR. AP6013477 BOURCE CODE: UR/C374/5 /000/002/0282/0295
AUTHOR: Zubov, P. I.; Sukhareva, L. A.; Grozinskaya, Z. P. Krylova, L. M.; Cochkin, D. A.; Rzayev, Z. H.
ORG: Institute of Physical Chemistry, Adademy of Sciences SISR (Institut fizichoskoy khimii Akademii nauk SSSR)
TITLE: Study of the physicomechanical properties of styronal basis coatings
SCURCE: Mekhanika polimerov, no. 2, 1966, 292-295
TOPIC TAGS: polymer structure, protective coating, solid physical property, solid mechanical property, adhesion
ABSTRACT: A two-component system obtained by copolymerizing mayre as with maldic anhydride in the proportion of 1:1 at 60°C without catalyst or splivent was studied. The
of the coatings, and the strength and adhesion characteristics, the structure
of curing and that the limiting value of those stronger to the limiting value of those strongers to the limiting value of the limiting val
tions under which the coatings were formed. The effect of forming temperature on the structure was studied by IR spectroscopy. Coatings formed from actions solutions were
UDC: 678:539.4019

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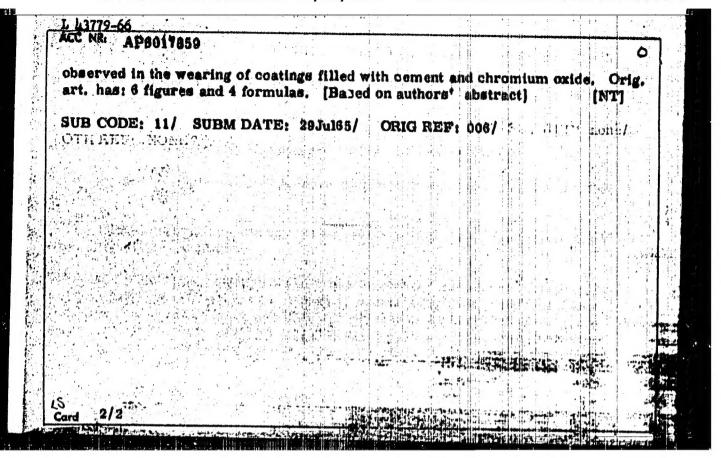
ACC NRi AP6022869	Source code: ur/0303/66/	000/002/0030/0034
AUTHOR: Naumova, S. F.; Mikhayi	lovskiy, Yu. N.; Zubov, P. I.	42 B
ORG: none	A Maria Mari	\mathcal{B}
TITIE: Effect of the vapor and	gas permeability of polymer films on	their properties
SOURCE: Lakokrasochnyye materia	aly i ikh primeneniye, no. 2, 1956, 30	-34
	, polymer film, hydrogen chloride, met	il oxidation,
	, and the same of	
tion rate of a metal in a moist	rmeability of loose polymer film coating atmosphere in the absence of an adhesi	ve bond between
ethylene (70 µ thick), polytetre	ied. The polymer films were PE-500 his afluoroethylene! (teflon) (55 μ), and V-	-118 GolyvinyI
chloride (180 µ). A new method	of measuring slow oxidation rates of r changes in the electronic conductivity	etals was used
of a thin metal film (~10° cm)) under the polymer film. In order to	increase the sen-
sitivity of the method, the mete	al employed was magnesium, because of	its high reactiv-
practically independent of the	e moist atmosphere the oxidation rate on nature of the polymer film (in the case	of the metal is
film). This is because the rate	s-determining step in the exidation is	the inhibition of
the anodic process of metal ioni	ization (hydration), not the diffusion	of moisture
Card 1/2	UDC: 667,613,4	

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002065610003-8"



L 43/19-00 EWT(m)/EWP(1)/T TJP(c) DJ/RM ACC NR: AP6017859 SOURCE CODE: UR/0069/66/028/003/0399/0403 (A) AUTHOR: Zubov, P. I.; Kadyrov, M. Sh.; Plavnik, G. M.; Grozinskaya, Z. P. ORG: Institute of Physical Chemistry, AN SSSR, Moscow (Institut fizicheskoy khimii AN SSSR) TITLE: Investigation of the wear resistance of epoxy coatings B SOURCE: Kolloidnyy zhurnal, v. 28, no. 3, 1966, 399-403 TOPIC TAGS: wear resistance, friction, resin, titanium dioxide, chromium oxide, epoxy coating , PLASTIC ABSTRACT: The wear resistance of epoxy coatings has been investigated. The wear value of ED-5 resin coatings with sliding friction is lower when wear products are removed because the protective lubricating layer formed is removed. The addition of tale and cement reduces the coating wear while the addition of titanium dioxide and chromium oxide increases it. The intensive wear of a counterbody was Card 1/2 UDC: 541.183

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002065610003-8"



"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002065610003-8

SOURCE CODE: UR/0413/66/000/009/0075/0075 EWT(m)/EWP(j)/TL 44585-66 ACC NR. AP6015668 (A) INVENTOR: Zubov, P. I.; Kochkin, D. A.; Rzayev, Z. M.; Sukhareva, TITLE: Method of obtaining copolymers. Class 39, No. 181289 15 SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 9, 1966, TOPIC TAGS: copolymer, styrene, ether, maleic anhydride, copolymerization, 75 esterification, dehydration ABSTRACT: An Author Certificate has been issued for a method of obtaining copolymers by esterification of styromal or maleic anhydride, with subsequent copolymerization of the ether obtained with styrene and esterification reagents. obtain copolymers possessing bactericidal activity tin or organolead hydroxylcontaining compounds or byproducts of their dehydration are used as esterifying [NT] reagents. [Translation] SUB CODE: 11/ SUBM DATE: 15May64/ UDC: 678, 746, 22-134, 434, 2:667, 613:620, 193, 81 Card 1/1 Elm

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ACC NRI AP6030605 (AN) SOURCE CODE: UR/0413/66/000/016/0093/0093	40
INVENTOR: Yeliseyeva, V. I.; Avetisyan, I. S.; Drezel's, S. S.; Zubov, I	2. I.;
Popov, V. A.; Makarov, Yu. A.; Izmaylova, I. S.; Orlova, K. G.; Gerasin A. S.; Gordonov, M. D.; Il'chenko, G. I.; Shreyner, S. A.	iova,
ORG: none	
TITLE: Method of obtaining alkyl acrylate copolymers. Class 39, No. 1850	057
SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 16	1966,
TOPIC TAGS: copolymer, copolymerization, monomer, alkyl acrylate	, in the second
ABSTRACT: An Author Certificate has been issued for a method of obtainin alkyl acrylate copolymers with a <u>vinyl acetate</u> by emulsion copolymerization	g
proper monomers in the water phase in the presence of an anion emulsifier.	To
obtain stable dispersions, 1-5 mol % unsaturated carboxylic acid, such as crylic acid, is introduced into the initial monomer mixture. [Translation]	metha- [NT]
SUB CODE: 07/ SUBM DATE: 16Jan65/	
Card 1/1 Lth UDC: 678.744.32-139	

L 04964-67 EWT(m)/EWP(j)/EWP(t)/ETI LJP(c) JD/WB/RH ACC NR: AP6006723 SOURCE CODE: UR/0303/66/000/001/0053/0055 Sokolova, Ye. M.; Naumova, S. F.; Mikhaylovskiy, Tu. N.; Zubov AUTHOR: ORG: none TITLE: New rapid method of evaluating the protective properties of polymer coatings on metals in corrosive media SOURCE: Lakokrasochnyye materialy 1 ikh primeneniye, no. 1, 1966, 53-55 TOPIC TAGS: protective coating, corrosion ABSTRACT: A rapid method is proposed for evaluating the protective properties of coatings on metals in any corrosive media (i. e., liquid electrolytes, nonelectrolytes or gaseous media). It involves the recording of the change in the resistance of the metal base during the testing. PE-500 polyethylene, PVKh-990 polyvinyl chloride and Teflon were thus tested (in the form of films 90, 190 and 60 µ thick respectively) in HCl and HNO3 vapors. The polymer films were bonded with polyisobatylene adhesive to magnesium films evaporated onto glass (magnesium was chosen as the metal base because of its high corrosion activity). In the HCl atmosphere, magnesium begins to dissolve immediately after the sample comes in contact with the HCL vapor. The protective properties of the polymer films studied increase in the series polyvinyl chloride -Teflon - polyethylene for both HCl and HNO3. The results lead the authors to recommend this method as a means of evaluating the protective properties of paint and **Card** 1/2 UDC: 667.61

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ACC NR. AP6031651 SOURCE CODE: UR/0020/66/170/001/0139/0142 AUTHOR: Zubov, P. I.; Kiselev, A. V.; Krylova, L. M.; Sukhareva, L. A.; Lygin, ORG: Institute of Physical Chemistry, Academy of Sciences, SSSR (Institut fizicheskoy khimii Akademii nauk SSSR); Moscow State University im. M. V. Lomosov (Moskovskiy gosudarstvennyy universitet) TITLE: Effect of molecular interaction between polymers and solids in the mechanical properties of polymer coatings SOURCE: AN SSSR. Doklady, v. 170, no. 1, 1966, 139-142 TOPIC TACS: polymer coating, molecular interaction, polymer method, internal stress, coming strength, wrating adhesion, plastic coating, polyester main, othyl ABSTRACT: A study has been made of the interaction of polymer functional groups with filler surfaces, and of the effect of this interaction on the internal stresses, strength, and adhesion of polymer coatings. The experiments were conducted with PN-1 polyester resin or FL-50 akyd resin, and aerosil filler, both nonmodified or modified with actadecylamine. The interaction was studied by IR spectroscopy. The results of the experiments given in graphic form indicated that the mechanical properties of polymer coatings are highly dependent on the nature of the molecular interaction between polymers and solids. Orig. art. has: 4 figures. SUB CODE: 11, 20/ SUBM DATE: 07Dec65/ ORIG REF: 008/ OTH REF: 001 Card 1/1

ACC NR: AT7002112

SOURCE CODE:

SOURCE CODE: UR/0000/66/000/000/0269/0273

AUTHOR: Zubov, P. I.; Sukhareva, L. A.

ORG: none

TITLE: Investigation of internal stresses in polymer coatings

SOURCE: Vsesoyuznaya konferentsiya po polyarizatsionno-opticheskomu metodu issledo-vaniya napryazheniy. 5th, Leningrad, 1964. Polyarizatsionno-opticheskiy metod issledo-vaniya napryazheniy (Polarizing-optical method of investigating stresses); trudy konferentsii. Leningrad, Izd-vo Leningr. univ., 1966, 269-273

TOPIC TAGS: stress, stress analysis, plastic coating, optic method, adhesion, plastic

ABSTRACT: The adhesion, physical properties and wear of plastic coatings depend on the internal stresses due to variation in the number and distribution of the cohesive and adhesive links between the coating and the substrate. The influence of formation and aging of the coating, its composition and thickness, the composition of the plasternal stresses in the substrate, and of other factors on the generation of incle. The internal stresses were determined at the interface of a glass substrate with the particular coating. The internal stresses increase at a constant rate during

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ACC N4: AT7002112

the formation of the film up to a limiting value, and then relax during the storage later form temperature until a certain steady state value is reached. For instance, in formation, but in thicker films the maximum value is reached after 12 to 14 hrs. The speed of stress relaxation is also related to the thickness of the coating, as well as to the absorption of water vapors from the air. The magnitude of internal stresses plastificators can decrease the stresses. The conditions of hardening have a substantial effect on the rate of formation and the number of links due to the evaporation on the generation of internal stresses. The modification of the substrate surface through additives which affect the nature of the links at the interface, can either speed up or slow down the rate of growth of internal stresses. The authors include tabulated data and graphs on the effects of the various factors on internal stresses.

SUB CODE: 11,20/ SUBM DATE: 14Jun66/ ORIG REF: 004

Cord 2/2

ACC NR: AP6037026

(N)

SOURCE CODE: UR/0374/66/000/005/0651/0658

AUTHOR: Grozinskaya, Z. P.; Kadyrov, M. Sh.; Zubov, P. I.

ORG: Institute of Physical Chemistry, Academy of Sciences, BSSR, Moscow (Institut fizicheskoy khimii Akademii nauk SSSR)

TITIE: Relation of the wear resistance of polymer coatings to their physicomechanical properties

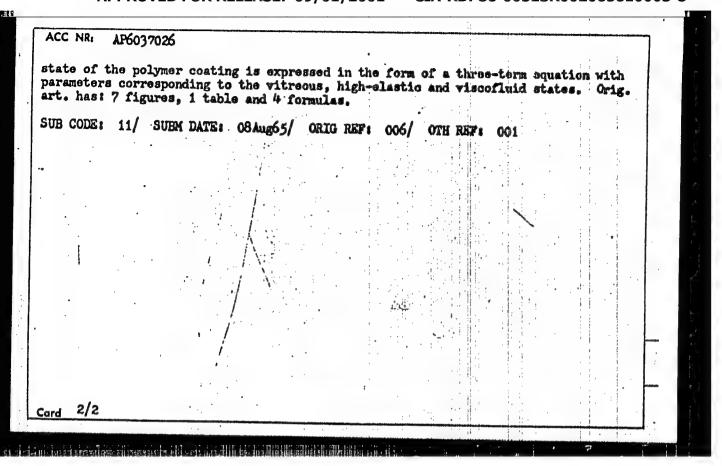
SOURCE: Mekhanika polimerov, no. 5, 1966, 651-658

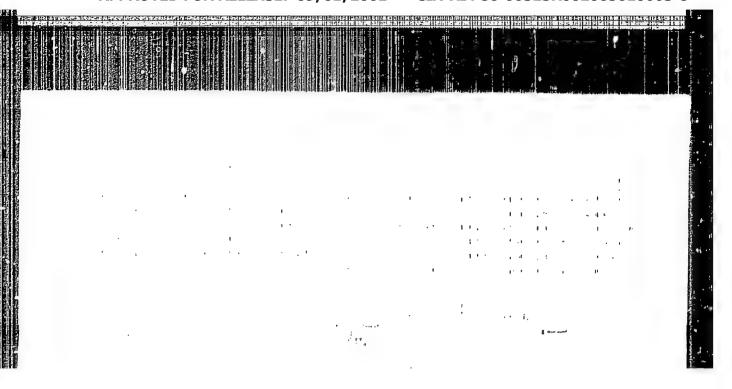
TOPIC TAGS: wear resistance, plastic coating, elastic modulus

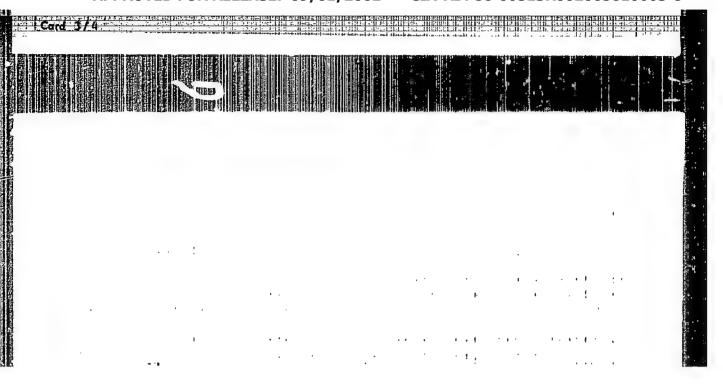
ABSTRACT: An experimental study of the wear resistance of a series of polymer coatings exposed to the action of metal counterbodies of various physicomechanical properties has shown an increase in wear with increasing elastic modulus of the polymer coating and a decrease in wear with increasing elastic modulus of the counterbody. The introduction of a filler into the film-forming agent has different effects on the wear resistance of the coatings: mineral fillers increase the modulus and decrease wear, and organic ones decrease both the modulus and wear. The wear resistance of coatings based on ED-5 epoxy resin depends on the type of curing agent and curing time and diminishes with increasing elastic modulus. The magnitude of wear is expressed by a two-term analytical equation which treats the wear of the polymer coating as a function of the counterbody. The magnitude of wear as a function of the physical

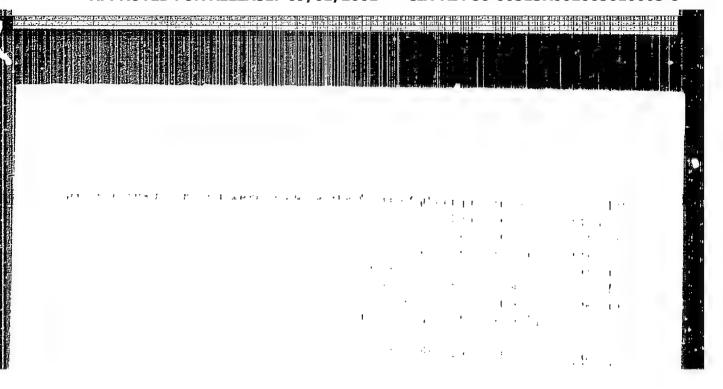
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UDC: 678:539.37









Card 2/2

Trans of cross-linking in solutions of polyvinyt alsohal.

Vysokom.soed. 6 no.5:811-817 Ry 164. (NFRA 17:8)

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CIA-RDP86-00513R002065610003-8"

AVETISYAN, I.S.: FOSPF10VA, K.A.; 20BOV, P.F.

Properties of polymethacrylate latex films and describent on the molecular weight, Koll-Zhur. 25 no.3:273-281 My-Jo 163.

(MIRA 17910)

1. Justitut fizioheakoy khimii AN SJSR, Muskus.

Thermal aging of nitrocellul 299-303 My-Je 163.	lose ceatings.	Koll shur	25	no.3: (MIRA	17:10)	
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KANEVSKAYA, Ye.A.; ZUEOV, P.I.; IVENOVA, L.V.; LIFATOV, YI.S.

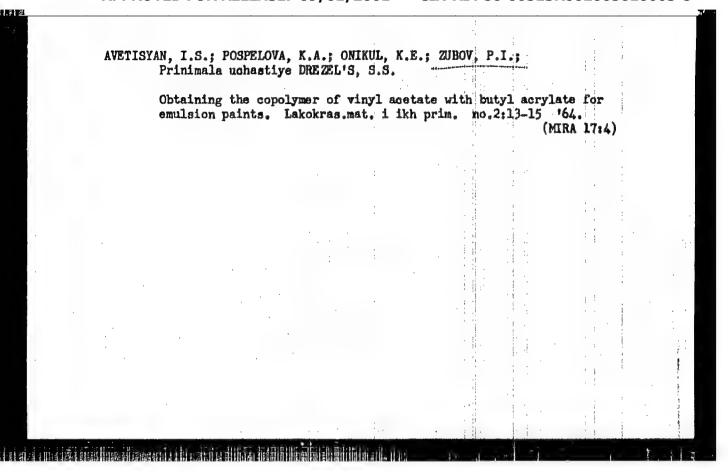
Temperature dependence of light scattering and viscosity of polymethacrylic acid solutions. Vysokom. coed. 6 np.6st.i.987 Je '64 (MIRA 18:2)

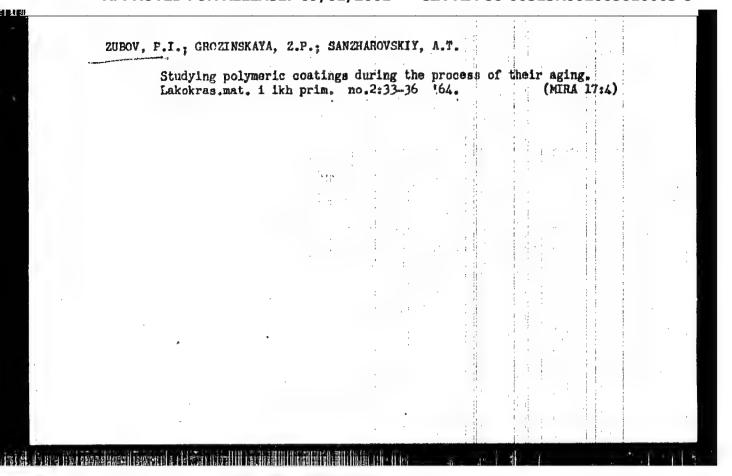
1. Institut fizicheskcy khimii AN SSSR.

ZVEREN, M.P.; BARASH, A.M.; ZHEOV, F.F.

Heats of precipitation of polyacrylonitrile from solutions.
Vysokom. soed. 6 no.6:1012-1015 Jo '64 (MIPA 18:2)

1. Moskovskiy institut tonkoy khimicheskoy takunologii imeni Lomonosova.





ACCESSION NR: AP4040514

s/0303/64/000/003/0028/003L

AUTHOR: Zubov, P. I; Sukhareva, L. A.; Paturoyev, V. V.; Kovalichuk, L. H.

TITIE: Influence of fillers on the mechanical and adhesive properties of polyester coatings

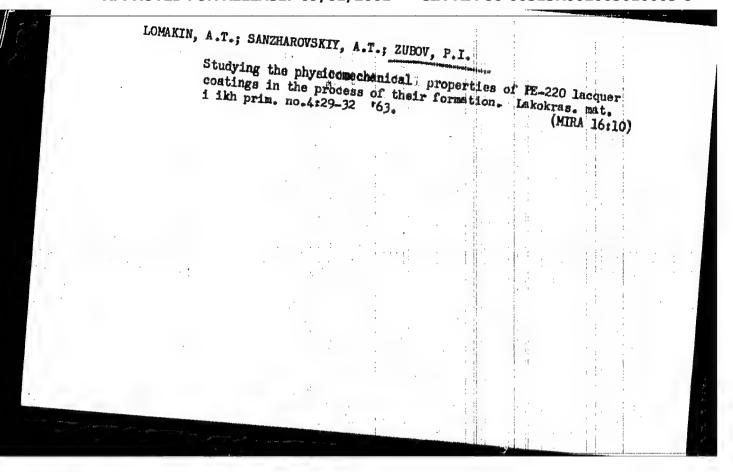
SOURCE: Lakokrasochny*ye materialy* i ikh primeneniye, nb. 3, 1964, 28-31

TOPIC TAGS: polyester resin, polyester coating, adhesion, filler

ABSTRACT: The object of the study was the polyester resin PN-1. It was found that internal stressos in filled polyester coatings depend on the strength of the bonding (adhesion) between the particles of the filler and the binder. As the content of active filler increased in the polyester coatings, the internal stresses, adhesion of the coatings to the base and compression strength increased while the breaking strength decreased. It was shown that the internal stresses in filled polyester coatings may be reduced by modifying the fillers with surface-active agents causing a decrease in the adhesion between the filler particles and the binder. An increase in the breaking strength of the filled coatings was associated with a 1.5 to 2-fold reduction in internal stresses. When

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ACCESSION the modification to be tween the	er was int	andre a	4n	. 1		distance of the second state of the second sta		1.
ASSOCIATION	: none	articles sion of coatings	and the bine the coating took place.	xceeding der was w to the ba	the optimeakened or se, in in	un amount, onsiderably cornal street	the adhesion , and a sharp ses, and in	;
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ZIBOV. P.I.; GROZINSKAYA, Z.P.; SANZHAROVSKIY, A.T.

Effect of the duration of heating on the deformation properties of polymer films. Koll.zhur. 25 no.5:533-536 S-D '63. (MIRA 16:10)

1. Institut fizicheskoy khimii AN SSSR, Moskva.

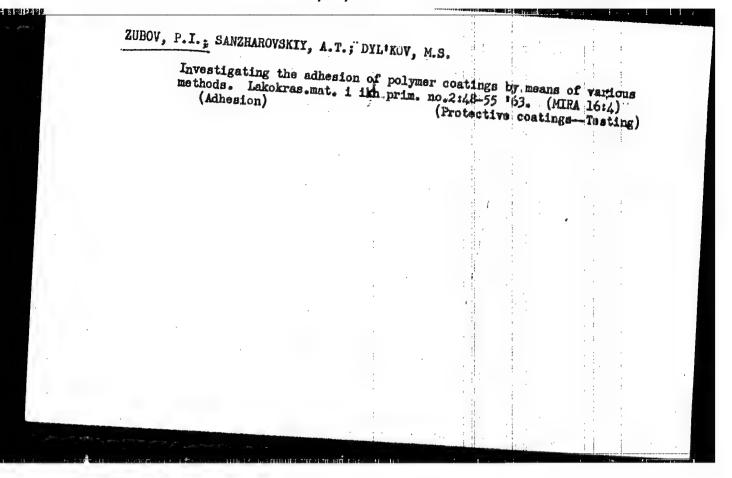
BABUSHKIN, A.A.; GOLIKOVA, V.S.; KRYLOVA, L.M.; KIMRL'FEL'D, Ia.M.;

ZUBOV, P.I.

Use of infrared spectrometry in studying the kinetics of the formation of polymer coatings. Izv. AN SSSR. Ser. fiz. 27 fo.7:978-980 '63.

1. Institut fizicheskoy khimii AN SSSR. (Solid film) (Spectrum, Infrared)

Kanevs	SKAYA, Ye.A.; LIPATO	OV, Yu.S.; ZUBOV, P.	I.		:
	Effect of addition solutions of poly Ap . '63.	on agents on the str methacrylic acid.	uctural viscos Vysokom soed.	o no.4:587-5	92
		heskoy khimii AN SS himii AN BSSR	SR i Institut o	(MIRA	16:5)
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EPR, ENF(1)/EPP(0)/ENT(n)/BIS \$/032/63/029/005/016/022 RM MAIN AUTHORS: Grozinskaya, Z. P., Kiselev, M. R. and Zubov, F. I. TITLE: Method of determining wear of polymeric doutings PERIODICAL: Zavodskaya laboratoriya, v. 29, no. 5, 1963, 610 A method of determining the wear resistance of polymeric coatings and films is proposed, based on a combination of friction -- #liding to-and-fro motion and vibrating notion of a rubbing body in a direction perpendicular to the abraded surface. This was accomplished with an electrical device which is described; the wear on a given test piece varied linearly with the time, and the results of tests of several materials agreed with results obtained by other methods. There is one figure. ASSOCIATION: Institut fizicheskoy khimii Akademii nauk assa (1 Physical Chemistry of the Academy of Sciences Uscil) ja/ Card 1/1

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S/00/20/63/150/U3/0350/0360

AUTHOR: Zubov, P. I.; Sukhareva, L. A.; Smirnova, Yu. P.

TITLE: Influence of internal stresses on "longevity" of polymer coatings

SCURCE: AN SSSR. Dokledy, v. 150, no. 2, 1963, 359-360

TOPIC TAGS: internal stresses, polymer coatings, aging

ABSTRACT: Dependence of duration on the adhesive stress of polymater coatings has been measured by optical method using automatic recording apparatus, described by P. I. Jubov and L. A. Lopilkina (Yestnik AN SSSE, no. 3, 40, 1962). Authors conclude by stating that there is a linear relationship between the duration of adhesion of a coating and internal stresses during a change in the subjection of stresses within the limits from 30 to 9 kilograms per square cm. Orig. art. has

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry, Academy of Sciences SSSR)

SUBMITTED: 24Jan63

SUB CODF: CH

DATE ACQ: 12Jun63 NO REF SOV: 007

ENCL: 00 OTHER: 001

SUKHAREVA, L.A.; SMIRNOVA, Yu.P.; ZUBOV, P.I.; ZAMOTOVA, A.V.; KHVILIVITSKIT, R.Ya.

Internal atresses in reinforced systems based on polyester acrylate binding agents. Plast. massy no.10:31-34 *65.

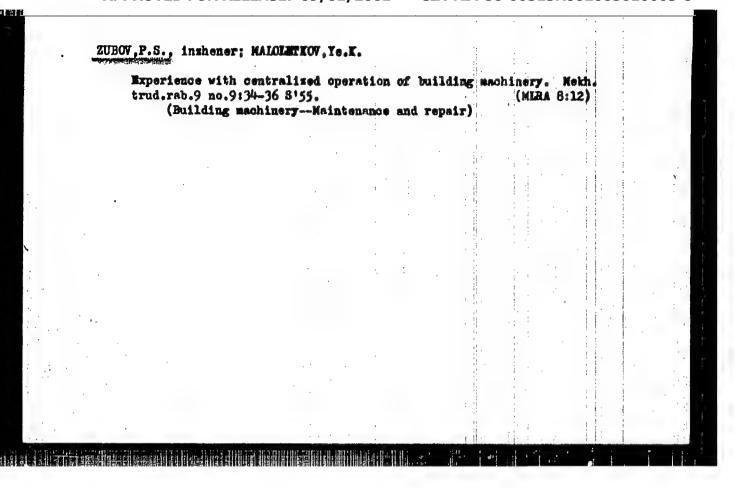
(MIRA 18:10)

ENT(m)/ENP(v)/ENF(1)/T/ENP(t)/ENP(b)/ENA(h) JD/ IJP(c) SOURCE CODE: UR/0020/65/165/003/0626/0628 ACC NR: AP5028915 AUTHOR: Kabanov, V. Ya.; Grozinskaya, Z. P.; Zubov, P. .; Spitsyn, Vikt. I. (Academician) ORG: Institute of Physical Chemistry, Academy of Sciences SSR (Institut fizicheskoy khimii Akademii nauk SSSR) TITLE: The study of adhesion of polyethylene coatings on aluminum bases during irradiation SOURCE: AN SSSR. Doklady, v. 165, no. 3, 1965, 626-628 TOPIC TAGS: adhesive bonding, polyethylene plantic, protective coating, irridiation effect, HOMESION, ELECTRON ABSTRACT: It was found earlier by the authors (Vysokomolek, soved, in print) that prolonged low intensity irradiation of polyethylene coatings pesuits in a considerable increase in adhesion. The present paper describes the direct investigation of such adhesion on samples subjected to a beam of accelerated electrons. Samples were prepared from nonstabilized low-pressure polyethylene deposited by melting on 501-thick aluminum foil supports. The heating lasted 10 min. at 2300 with a subsequent application of 6 kg/cm2 of pressure. Results are summarised on Table 1. Card 1/3

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TABLE 1. Adhesion of polyethylene coatings to aluminum supports subjected to irris (samples were prepared three days prior to the tests). Adhesion (kards aluminum supports subjected to irris (samples were prepared three days prior to the tests). Adhesion (kards aluminum supports subjected to irris Adhesion (kard	
ADHESION KS/CM SELM TURNED OFF UNDER SEAM WITH CRAMSE WITH CRAMSE WITHOUT WITH CRAMSE REMOVAL TENSITY, ATION K 10-4 TIME NO, OF RAD/SEC PRIOR WITHOUT AD- TEST TO THE CHARGE HESION CURRENT ADHES- REMOVAL 1 2.7 1 1.5 2 6,2 3 6,2 1 2.65	0
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GURVICH, Mark Arkad'yevich, prof.; ZUBOV, P.V., red.; LEBEDEVA, V.I., tekhm. red.

[Suspension of the statute of limitations in Soviet civil law]
Presekatel'nye sroki v sovetskom grazhdanskom prave. Moskva,
Vses.iurid.zaochmyi in-t, 1961. 78 p.

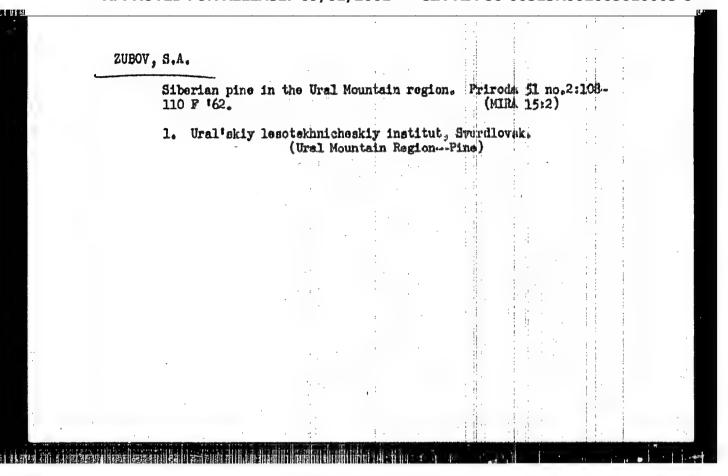
(Limitation of actions)

(Limitation of actions)

BAGRINOVSKIY, A.D., inzh.; ZUBOV, R.V., inzh.; SHPAAK, G.V., inzh.

Blectric model used in designing mine ventilation systems.
Bezop.truda v prom. 3 no.2:23-25 Y '59. (MIRA 12:2)

1. Institut gornogo dela AN SSSR.
(Mine ventilation)



Cedar grove. Pr	iroda no.6:84 Je 160.	(MIRA 1316)	**
l. Uraliskiy les	otekhnicheskiy institut, S hnyaya Salda—Cedar)	MOLCTOARK*	
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ZUBOV, S.A.; LUGANSKIY, N.A.

Siberiar pine in the vicinity of Sverdlovsk. Bot. zhur. 47
no.7:1006-1009 J1 '62. (MIRA 15:9)

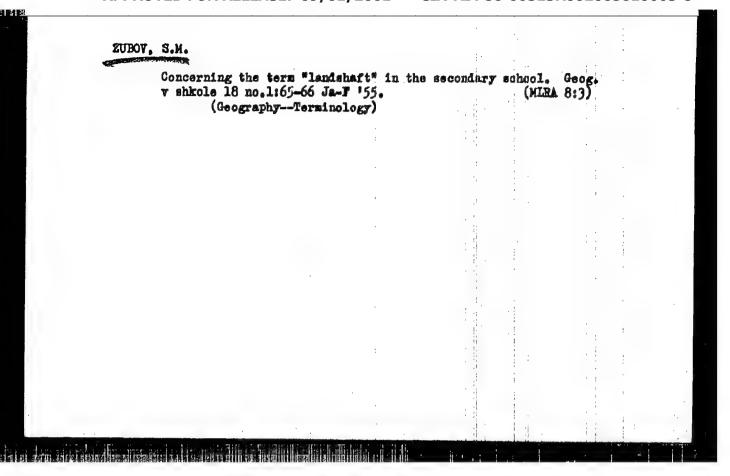
1. Ural'skiy lesotekimicheskiy institut i Opytnaya stantsiya po ozeleneniyu gorodov Ural'skogo nauchno-isələdovatel'skogo instituta Akademii kommunal'nogo khozyayatva, Sverdlovsk. (Sverdlovsk Region---Pine)

DETLAF, T.A.; ZUBOV, S.E. Correlating the duration of the periods of maturation and embryonic development in the sturgeons Adipenser guidenstaedtii and A. stellatus. Dokl. AN SSSR 143 no.3;746-748 Mr '62. (MIRA 15;3) 1: Institut morfologii shivotnykh im. A.N.Severtsova AN SSSR. Predstavleno akademikom Yu.A.Orlovym; (Sturgeons)(Temperature—Physiological effect)

ZUBOV, S. M.

ZUBOV, S. M. - "Geomorphological Structure of the Yakh-Su River.Valley in Connection With Certain Features of the Topography of South Pridarvaz'ya." Sub 26 Apr 52, Moscow Oblast Pedagogical Inst. (Dissertation for the Degree of Candidate in Geological and Mineralogical Sciences).

SO: Vechernaya Moskva January-December 1952



3(5)

50V/12-91-3-12

AUTHOR:

Zubov, S.M.

TITLE:

The Organization of the Training at the Departments of Geography of the Pedagogical Institutes in China

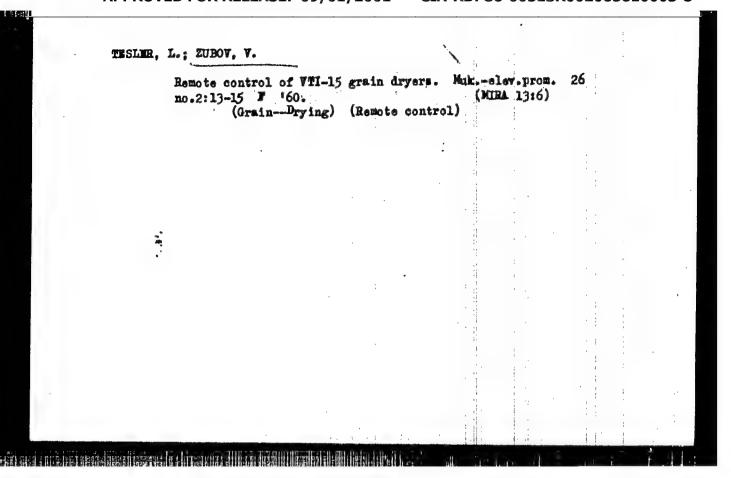
PERIODICAL:

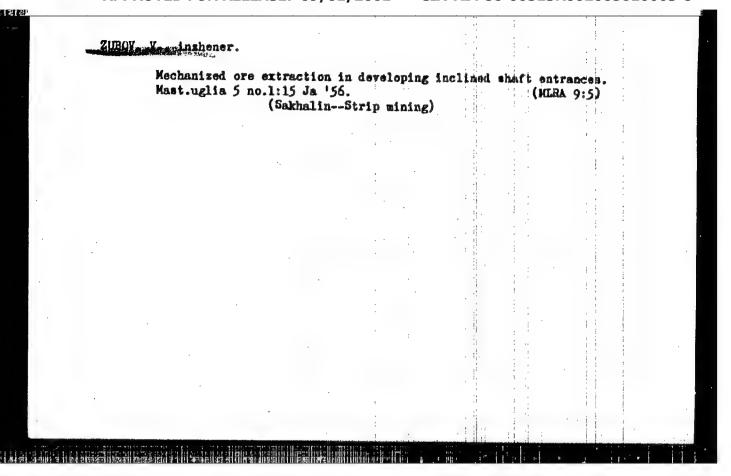
Izvestiya VGO, 1959, Vol 91, Nr 3, pp 298-299 (USSR)

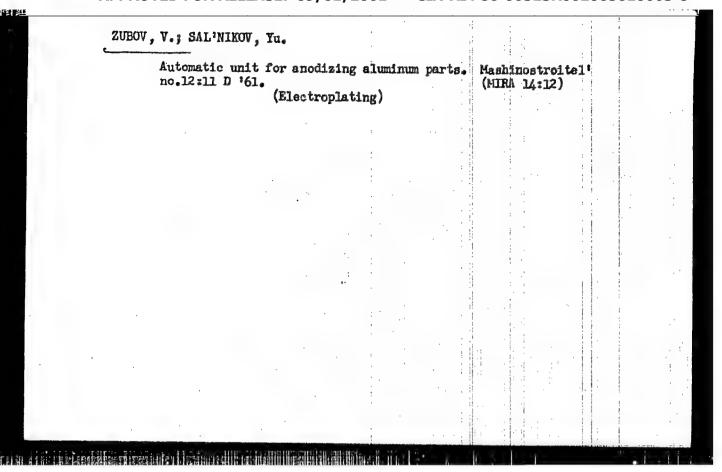
ABSTRACT:

The author was in Red China from 1954 to 1956. reports on the training methods used at the colleges of geography annexed to the Institutes of Pedagogy of geography annexed to the institutes of Shanghai Hua in China. Pedagogical institutes of Shanghai Hua in China. Pedagogical institutes of Shanghai Pa-Tung), Kanton (Kuang-chou), and Hanking are named. pers of the lecturers are reproduced prior to the lecture. Students attend 36 lectures per week and are required to work 3 hours daily except Saturday. Colleges of geography are usually equipped with several workshops, e.g. methodology of geography, geography of soils, geography of plants, cartography

Card 1/2







66374

24,3420 **AUTHORS:**

SOV/120-59-5-27/46 Zubov, V.A., Petrash, G.G. and Sushchinskiy, M.M.

TITLE:

A Double-beam Spectrometer for the Study of Combinational

(Raman) Scattering of Light

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 5,

pp 119 - 120 (USSR)

ABSTRACT:

A photo-electric spectrometer is described, which uses a diffraction grating having a dispersion of 5.5 Å/mm. The instrument works both in the single-beam and doublebeam modifications. In the latter case, the ratio of the intensities of lines in the spectrum under investigation to the intensity of the exciting line is recorded, which excludes instabilities in the photomultiplier and the light source. The instrument is illustrated in Figure 1. In this figure, 1111 is the main beam, 2222 is the comparison beam, P is the diffraction grating, O,

 ${\tt O_2}$ are the collimator objectives, ${\tt S_1}$ and ${\tt S_2}$

input and output slits, §3Y is the photomultiplier, M is a mercury lamp, K is a container with a scattering substance, OK is an optical wedge, M is an interrupter,

Card1/3

66374

A Double-beam Spectrometer for the Study of Combinational (Raman) Scattering of Light

NY is a pre-amplifier, Y is a selective amplifier, CAL is a synchronous detector, Φ is a photo-resistor which is used to obtain signals which synchronise the work of the detector, Y controls the reversing motor, 3 is a recording device (pen recorder). Π is a condenser and Π is a lens which focuses the light beam onto the photomultiplier photo-cathode. A change in the photomultiplier voltage of + 55 V, which in the single-beam set-up gives a change in the recorded signal by a factor of 2, has no effect on the double-beam apparatus. Figure 2 shows the 4350 Å mercury line obtained with the apparatus. The curve on the left shows the line under normal working conditions of the lamp.

Card 2/3

A Double-beam Spectrometer for the Study of Combinational (Raman)

ASSOCIATION: Fizicheskiy institut AN SSSR (Physics Institute of the Ac.Sc., USSR)

SUBMITTED: August 21, 1958

Card 3/3

SC7/51-6-6-30/34

24(7)

A STREET OF THE PROPERTY OF TH

Zubov, V.A., Petrash, G.G. and Sushehinskiy, M.M. AUTHORS:

TITLE:

Some Applications of a Spectrometer with High Dispersion in Molecular Analysis Using Ramen Spectra (Neksteryye primeneniya spektrometra s bel'shoy dispersivey dlys molekulysmogo anallia po spektram kombinatsionnogo rasseyaniya sveta)

PERIODICAL: Optika i spektroskopiya, 1959, Vol 6, Nr 6, pp 827-829 (USSR)

ABSTRACT:

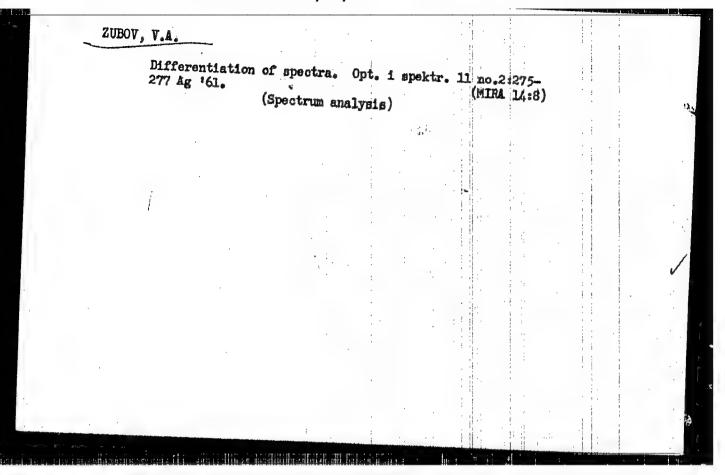
The authors describe a spectrometer for study of Raman spectra constructed at the Optical Laboratory of the Physics Institute, Academy of Schences, U.S.S.R. A plane diffraction grating was used as the dispersing element. It was an echelette grating with 600 lines/mm, ruled area 140 x 150 mm, and it was prepared at the State Optical Institute. Collimators had objectives made at the State Optical Institute (focal length 1600 mm; relative aperture 1:12). The instrument was meant for use in the second A photomultiplier order in the blue region and had dispersion of 5 Å/mm. FEU-17 was used as a receiver. A PRK lump or a low-pressure lamp could be used as a source. There are two ways of using this spectrometer. One is the 2-beam method described in detail earlier (Ref 4). In this case one records the ratio of the light signal coming from a cell with the scattering substance to the light signal proceeding directly from the lamp. The other way is the so-called differential method shown

Card 1/2

Some Applications of a Spectrometer with High Dispersion in Molecular Analysis Using

schematically in Fig 1. Light from two different sources is directed alternately by a rotating mirror onto the entry slit of the spectrometer. When the intensities of the two light beams are the same the photomultiplier current is unmodulated and, therefore, blocked by a selective is more intense the resulting photocurrent has an alternating component line shapes (Ref 2) and structure or bands consisting of closely spaced length of the exciting light (Fig 2), (ii) studies near the wave-(subtraction of the spectrum of one component from the spectrum of the mixture), (iii) studies of small changes of line widths and intensities. There are 2 figures and 5 references, 4 of which are Soviet and 1 English.

Card 2/2



S/051/62/013/006/017/027 E039/E120

AUTHOR:

Zubov., V.A.

TITLE:

A study of the degree of depolarisation of Raman lines as a function of the exciting light frequency

PERIODICAL: Optika i spektroskopiya, v.13, ho.6, 1962, 861-862

TEXT: This work, which is a continuation of earlier experiments, is important in investigating the nature of the Raman from polarisation. Measurements were made on the degree of depolarisation in the ultraviolet region near the self absorption bands for a series of materials (excitation lines 3132, 3126 and the second order and 4.3 Å/mm in the third order was used, together with a ϕ by -18 (FEU-18) photomultiplier as a detector. The lines. Results obtained for the above ultraviolet lines and also depolarisation ϕ is given by:

Card 1/3

A study of the degree of

S/051/62/013/006/017/027 E039/E120

$$e = \frac{6g'^2}{5b'^2 + 7g'^2}$$

where b' and g' are tensors derived from polarisation pike. This is defined in terms of the JL and g electrons, as

$$\beta_{\mathbf{i}\mathbf{k}} = \beta_{\mathbf{i}\mathbf{k}}(\mathfrak{N}) + \beta_{\mathbf{i}\mathbf{k}}(\sigma)$$

The dependence of ϱ on the frequency \vee of the exciting light is estimated qualitatively. At low and high values of \vee the depolarisation ϱ is almost independent of \vee , while at interdue to π -electrons increasing with increase in \vee . In order to observe the change in ϱ with \vee the following conditions must be absorption band; 2) the degree of depolarisation of the is obtained with the results of other workers.

"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002065610003-8

A study of the degree of ... S/051/62/013/006/017/027 E039/E120

Results are presented for CCl4, benzene, toluene, pentane-1, pentadiene-1,3, 2 methyl butadiene-1,3 and 1,2-disililethane... There are 1 figure and 1 table.

SUBMITTED: May 18, 1962

ZUBOV, V. A.

Degree of depolarisation of Raman spectrum lines as a function of the exciting light frequency. Opt. i spektr. 13 no.6: 861-862 D '62. (MIRA 16:1)

(Raman effect) (Polarization(Light))

SUSHCHINSKIY, M. M., ZUBOV, V. A.

Relation between Raman spectra and electron absorption spectra.

Opt. 1 spektr. 13 no.6:766-774 D '62. (MIRA 16:1)

(Raman effect) (Electrons—Spectra)

S/C51/43/014/004/023/026

AUTHOR:

Zubov. V.A.

TITLE:

Dependence of the intensity of Raman lines in the Cil group on the frequency of excling light

FERIOTICAL: Optika i spektroskopiya, v.14, ma.4, 1963, 578-579

TEXT: This is a continuation of a program of work on the subject and is carried out in the range 5461 to 3021. Using a grating spectrograph in the second and third orders. CH group lines were selected as it is expected that σ -electrons will play the dominant role. The results show that the intensity of the 2652 cm⁻¹ line of cyclohexane changes with the fourth power of the frequency of the exciting light (\sim V¹). Insaturated and aromatic hydrocarbons are investigated and corrections are applied for changes in the absorption coefficient, refractive index and the affect of photochemical reactions. Experimental error is not more than 10% but because of corrections the sum of errors in the worst case is about 30%. The ratio of the intensities of the lines in the CH group does not change with \sim the frequency of exciting light. For unsaturated compounds with unsatisfied bonds, such as pentane-1 Card 1/2

Dependence of the intensity ...

S/051/63/014/004/023/026 E039/8420

and hexadione-1,5 there is some increase in intensity of the CH lines with increase in exciting quanta, but more slowly than the increase in intensity observed with the double (4C bond. Insaturated compounds with satisfied bonds show a faster increase in intensity but the intensity of the lines connected with the Vibration of the double bond increases more strongly... Denzene no increase in intensity of the CH lines is observed: with toluene there is some increase. The results of this class of materials agree with the literature. intensity of the CH lines shows the essential role of the The observed increase in In a theoretical examination of the problem it is necessary to take into account higher electron states. contribution of these higher levels may produce a deviation from the proportionality between the intensity of the Raman lines and the coefficient of absorption, resulting in a slower increase in intensity of the lines. There is I table.

SUBMITTED: September 28, 1962

Card 2/2

L 10727-63

ACCESSION NR: AP3003161

(bright vellow) and anisal-para-aminoazobenzene (red) showed that lasers are quite surable for studying Raman spectra of dye powders. The authors thank M. D. Galanin and A. M. Leontovich for the use of their ruby laser. Orig. art. has: I figure.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Institute of Physics, Academy of Sciences SSSR)

SUBMITTED: 12Apr63

DATE ACQ: 23Jul63

ENCL: 00

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NO REF SOV: 000

OTHER: 001

21/1/e Card 2/2

ACCESSION NR: AP4041128 \$/0053/64/083/002/0197/0222 AUTHOR: Zubov, V. A.; Sushchinskiy, H. H.; Shuyalov, I. K. TITLE: Stimulated Raman scattering of light SOURCE: Uspekhi fizicheskikh nauk, v. 83, no. 2, 1964, 197-222 TOPIC TAGS: laser, Raman effect, Raman laser, stimulated Raman scattering, Raman laser material ABSTRACT: The current state of theoretical and experimental work aimed at achieving Raman-effect laser action is presented in a comprehensive review based mainly on Western sources. The principal experimental results are considered for two cases: where the scattering material is located inside and where it is located outside;

the Fabry-Perot interferometer. In the latter case, particular attention is paid to the types of laser emission falling in the Stokes and anti-Stokes frequency regions. Discussion of the latest experiments is backed up by a theoretical exposition in terms of semiclass-...

ical and quantum interpretations of Raman-effect laser action.

Card 1/2

ACCESSION NR: AP4041128

Discussion of Soviet contributions is limited to the work of V. S. Mashkevich, who has previously presented the theory of stimulated Raman scattering in the Stokes region in terms of kinetic equations. The final section of the review deals with Raman-effect laser devices analyzing the work of C. H. Bekker (Zs. Phys. 172, 125, 1963). A footnote to the review mentions the publication of several papers which appeared too late for discussion in the text, including two Soviet works (V. T. Platonenko and R. V. Khokhlov, ZhETF 46,555 (1964); V. M. Fayn and E. G. Yashchin, ZhETF 46,695 (1964)) which treat a number of problems regarding two-photon processes involving Raman-effect laser action. Both papers derive expressions determining the generation threshold of Raman lasers. Orig. art. has: 7 figures, 71 formulas, and 3 tables.

ASSOCIATION: none

SUBMITTED: 00

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ENCL: 00

SUB CODE: EC

NO REF SOV: 005

OTHER: 019

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AUTHOR: Zubova, N. V.; Sushchinskiy, M. M. Zubov, V. A. 17, 5	•
TITLE: The complex line structure in stimulated Raman additering of light	
SOURCE: Zhurnal eksperimental noy i teoreticheskoy fiziki. Pis na v redskisiys. Prilozheniye, v. 2, no. 2, 1965, 63-67, and insert attached to p. 65	*
TOPIC TAGS: Raman scattering, Stokes line, stimulated emission, leser, Raman liser	
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pentadiene, benzene, and nitrobenzene the authors observed line spillting in the pentadiene, benzene, and nitrobenzene the authors observed line spillting in the pentadiene, benzene, and nitrobenzene the authors observed line spillting in the pentadiene, benzene, and nitrobenzene the authors observed line spillting in the pentadiene, benzene, and nitrobenzene the authors observed line spillting in the pentadiene, benzene, and nitrobenzene the authors observed line spillting in the pentadiene, benzene, and nitrobenzene the authors observed line spillting in the pentadiene, benzene, and nitrobenzene the authors observed line spillting in the pentadiene, and nitrobenzene the authors observed line spillting in the pentadiene	
above the threshold, when the line was split from 1-2 components into 5-6 components and the separation of the outer components changed from 1-2 to 10-12 cm	
As the pump power was increased, the number of components and their separation iecreased until only one line was observed when the pump power was 2 times greater	de la asses.
than the threshold power. The splitting of the lines was found to be independent of the nature of the apparatus used and the operating regime of the laser. The ef-	
fect was attributed to the fact that Reman scattering occiles on mplecules moving at a high speed. At a relatively low pump power the formation of it "apark" in the	
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AUTHOR: Zubov. V. A.; Sushchinskiy, M. M.; Shuvalov, I. E.

AUTHOR: Zubov. V. A.; Sushchinskiy, M. M.; Shuvalov, I. K.

TITLE: An investigation of stimulated Raman scattering

ORG: none

SOURCE: Zhurnal prikladnoy spektroskopii, v. 3, no. 4, 1965, 136-341

TOPIC TAGS: Raman scattering, Stokes component, Raman lamer, stimulated emission, laser 25 4

ABSTRACT: An experimental investigation was conducted of stimulated Raman scattering in benzene, bromobenzene, chlorobenzene, toluene, pyrideme, o-mylene, styrene, 1,3-pentadiene, 2-methyl-1,3-butadiene, carbon disulfide, carbon tetrachloride, and nitrobenzene. The dependence of the intensity of the first Stokes component on the properties of the scatterer, the concentration of its molecules, and the intensity of the excited light (from a Q-spoiled ruby laser) was investigated. It was established that, unlike spontaneous Raman scattering, the lime intensity of stimulated Raman scattering is an exponential and not a linear function of the intensity of the exciting light and the concentration of the scattering molecules. The exponential variation is in agreement with a simplified theory developed by the authors for the case when the intensity of exciting light slightly exceeds the excitation threshold. In the first approximation the inverse of the excitation threshold is a quadratic

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L 36014-66 IJP(c) GG/WW/WG EWT(1)/T ACC NR: AP6024513 UR/0386/66/004/002/0052/ SOURCE CODE: AUTHOR: Gorelik, V. S.; Zubov, V. A.; Sushchinskiy, M. M.; Chirkov, ORG: Physics Institute im. P. N. Lebedev, Academy of Sciences SSSR (Pizicheskiy stitut Akademii nauk SSSR) TITLE: Possibility of observing induced infrared radiation in Raman scattering of light SOURCE: Zh eksper i teor fiz. Pis'ma v redaktsiyu, Prilozheniye, v. 4, no. 2, 1966, 52-54 TOPIC TAGS: molecular spectrum, Raman scattering, ir radiation, ir quantum generator, stimulated emission, spectral distribution ABSTRACT: The authors discuss a new mechanism for producing population inversion between vibrational or vibronic levels of molecules. It is shown that if certain conditions for the possible transitions between molecular levels are satisfied, such that one of the levels does not become populated in the case of Raman scattering of light, so that the thermal distribution of the molecules over the vibrational levels may become disturbed and population inversion may occur. The required threshold power is evaluated from the gain per unit length of the transition near the generation threshold, and it is shown by preliminary estimates that the required minimum power is 107 W/cm2 for liquids and 104 W/cm2 for gases. The latter is attainable with a xenon lamp (power ~105 W/cm2), and the estimated molecule density at the upper level Card 1/2

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urns out then to man scattering on per cent and ltation mechant figure and 2	g can be obser i a molecule de ism is realiza	ved in liqui ensity 10 ¹⁶	ds, with cm ⁻³ at t	a quanc ho uppe	r level	The	brobo	sed e	X-
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ACC NR: AP6024868	SOURCE CODE: UR/0056/66/051/001/0101/0107
AUTHOR: Zubova, N. V.;	Kuz'mina, N. P.; Zubov, V. A.; Sushchinskiy, M. M.;
Shuvalov, I. K.	
ORG: Physics Institute	im. P. N. Lebedev, Academy of Sciences SSSR (Fizicheskiy
institut Akademii nauk S	SSR)
	bution in stimulated Raman scattering spectra
SOURCE: Zhurnal eksper:	mental noy i teoreticheskoy fiziki, v. 51, no. 1, 1966,
101107	
	ering, newtonic optics, laser, light
evnerimentally investig	ensity of stimulated Raman scattering spectra (SRS) was ated as a function of the exciting light intensity. The
and all all and all all all all all all all all all al	ted in a region of intensities above and below the experi- single flash. The intensity distribution in SRS spectra was
investigated for severa	Stokes and anti-Stokes components. The existence of a con-
siderable wing accompany	ving each component was detected. A structure of the first was found and was investigated in the threshold region and
below the threshold. O	rig. art. has: 7 formulas and 4 figures. [C5]
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SUB CODE: 20/ SUBM DA	TE: 21Feb66/ ORIG REF: 008/ OTH REF: 002/ ATD PRESS:
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"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002065610003-8

SOURCE CODE: UR/0053/66/089/001/0049/0088 IJP(c) EWI(1) 30408-66 AP6017864 ACC NRI Zubov, V. A.; Sushchinskiy, M. M.; Shuvalov, I. K. ORG: Physics Institute im. P. N. Lebedev, AN SSSR (Fizicheskiy institut AN SSSR) TITLE: Modern trends in Raman spectroscopy SOURCE: Uspekhi fizicheskikh nauk, v. 89, no. 1, 1966; 19-88 TOPIC TAGS: Raman spectroscopy, laser application, Raman scattering, stimulated emission, SPECTROPHOTOMETRIC ANALYSIS ABSTRACT: The authors review recent trends in Raman spectroscopy which are only briefly mentioned in previous survey articles. Fundamentally new methods are described for producing and studying Raman spectra. Spectrophotometric systems for registration of Raman spectra are divided into two categories: 1. systems for electrical division of the signals received from the scatterer (the signal to be measured) and those received directly from the excitation source (the comparison signal); 2. systems those received directly from the excitation source (the comparison signal); 2. systems for optical division. The operating principles of each class of systems are discussed as a basis for explaining their advantages and disadvantages. Methods and equipment are described for photoelectric registration of Raman spectra generated by pulsed excitation and the theoretical superiority of this method over continuous excitation is discussed. The greatest possibilities for practical application of the pulsed ્રામાં મોટી કર્યા છે. તેમ કરવા સામાના પ્રાથમિક કરવા છે. તેમ કરવા માટે કરવા માટે કરવા છે. તેમ માટે કરવા માટે કર માર્ગ માટે કરવા માટે

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ACC NR: AP6017864

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method are in high-speed Raman spectroscopy. The difference method for recording Raman spectra is considered as well as the registration of spectra which are differentiated with respect to frequency. Equipment and methods using laser technology for producing Raman spectra are described with particular emphasis on the progress which has been made with the improvement of continuous gas lasers. The rapidly developing field of stimulated Raman scattering is discussed and research on this type of scattering by materials in various states of aggregation is reviewed. The present state of the art in experimental technology indicates that stimulated Raman scattering lines may be obtained for nearly any material in any state of aggregation. Theoretical and experimental data are given on the spatial distribution of stimulated Raman scattering together with some of the energy characteristics and nonlinear effects associated with this phenomenon. The latest research in this field has opened up new possibilities for using this type of emission to amplify light signals in a broad spectral range. Orig. art. has:

[28]

SUB CODE: 20/ SUBM DATE: none/ ORIG REF: 023/ OTH REF: 051/ ATD PRESS:50/7

Card 2/2 (C)

EWP(1)/EWT(1)/EWT(m)/EWP(e) L 31134-66 RM/WH UR/0368/66/004/0351/0353 ACC NR: AP6012859 SOURCE CODE: AUTHOR: Berezin, V. I.; Zubov, V. A.; Kats, M. L.; Kovner, M. A.; Sidorov, N. K.; Stal makhova, L. S.; Sushchinskiy, M. M.; Turbin, Yu. P.; Shubalov, I. K. ORG: none 52 B TITLE: Intensities and line thresholds of stimulated Raman scattering SOURCE: Zhurnal prikladnoy spektroskopii, v. 4, no. 4, 1966, 351-353 TOPIC TAGS: laser, stimulated emission, Raman scattering, stimulated Raman scattering ABSTRACT: The relative values for the threshold I for the intensity of the exciting light necessary to attain stimulated Raman scattering in toluene, chlorobenzene, and pyridene have been measured. Using a theory of SRS developed by P. A. Apanasevich and B. I. Stepanov (Zhurnal prikladnoy spektroskopii, v. 1, 1964, p. 202), the authors derived the following formula $I_{B}/I = (I_{\infty}/\delta)(I_{\infty}/\delta)_{B} \quad v_{\beta B}^{3}/v_{\beta}^{3} \quad n_{B}^{3}/r_{\beta}^{3}$ (1)where I is the integral intensity of the SRS line, & is the line width, ug is the frequency of the scattered light, n is the index of refraction, and the B : identifies these quantities for benzene. The experimental values of subscript

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L 31134 <u>-66</u> ACC NR: A	P6012859 Table 1. Main paramet	ers a	nd os	cill¢	tion	thre	shold	s fo	r 8R8		2	
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	benzene 1,3-pentadiene 3-methyl-1,3-butadiene carbon disulfide styrene styrene styrene toluene chlorobenzene bromobenzene pyridine	992 1655 1638 656 998 1602 1634 1003 1002 1001 992	13411 12748 12768 13747 13408 12801 12769 13400 13401 13401	1,8 15 7 1 2 3 3 1,6	1,5 1,5 1,3 1,6 0,7 0,9 1,6 0,37 0,45 0,50	1 0,2 0,3 3,6 0,6 0,9 0,4 0,8 0,9	1,50 1,43 1,42 1,63 1,55 1,55 1,55 1,50 1,52 1,56 1,51	0.5	0,25 0,40 2,24 0,55 0,59 0,90 0,42 0,78 0,81 0,82	The second secon		
three of t p. 784) ar Table 1). be unity. values of	bstances investigated in he authors (Zhurnal eks) e compared with the the The value of 1/I for the Since the values of non for the D-line of sod formulas and 1 table. 20/ SUBM DATE: 17Mar	oretic ne lir Ng) fo lum (r	eal vene do no a la l	lues = 99 ruby	deri 2 cm lasei sed i	ved in south	benz rce w	ing i ene v ere v	ormule ras tak mavail ions.	en to able, Orig	see the	

Induced Reman scattering in mixtures. Zour. ekep. i teor. fiz. 48 no.1:378-380 Ja '65. (MRA 18:4)

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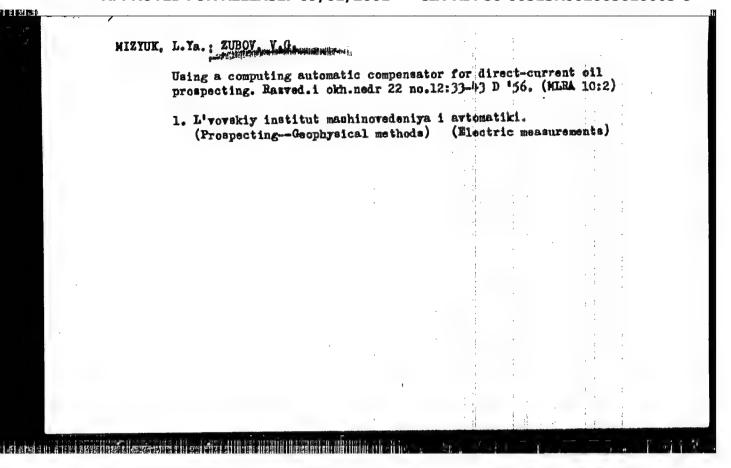
ZUBOV, V.A.; SUSHCHINSKIY, M.M.; SHUVALOV, I.K.

Excitation threshold of induced Raman scattering. Zhur. eksp. i teor.
fiz. 47 no.2:784-785 Ag 164.

1. Fizicheskiy institut imeni P.N.Lebedeva AN SSSR.

ZUBOV, Val'ter Afanas'yevigh; KUKIN, G.N., doktor tekhha nauk, prof., retsenzent; KISELEV, A.K., doktor tekhha nauk prof., spets. red.; CHUGREYEVA, V.N., red.

[Collection of problems on the study of textile materials]
Sbernik zedach po tekstil'nomu materialnvedenilu. Mackva, Legkaia industriia, 1964. 173 p. (VICA 1841)



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Karandeyev, K. B., Mizyuk, L. Ya., and Zubov, V. G. AUTHORS:

Directly measuring the apparent resistance of rocks TITLE:

in direct-current electrical prospecting

Referativnyy zhurnal, Geofizika, no. 3, 1962, 26, abstract 3A217 (Dokl. L'vovsk. politekhn. in-ta, 2, no. PERIODICAL:

2, 1958, 94-97)

TEXT: The authors give the principles of the layout of calculation-determining equipment for directly measuring the apparent resistance, at any value of the coefficient K of the measuring apparatus. The scheme's basic element is a millivoltmeter with an alternating additional resistance. To obtain a high inlet resistance the authors recommend the assembly of the millivoltmeter according to the electronic autocompensator scheme. The meter can be directly graduated in ρ_k values, which ensures scale uniformity. / Abstracter's note: Complete translation. 7

Card 1/1

ZUBOV, V. G., Cand of Tech Sci -- (diss) "Certsin Problems of the Theory and Calculation of Computer Instruments of the Indicator Type,"

L'vov, 1959, 16 pp (L'vov Polytechnical Institute) (KL, 2-60, 115)

VESHEY, A.V.; MIZYUK, L.Ya.; PETROY, Q.A.; POKIN, A.F.; CHIR'YEY, A.H.;
Prinimali uchastiye: ZUBOY, V.Q.; LARIONOY, L.V., KORCHAGIH,
V.I., red.izd-va; BYKOVA, V.V., tekhn.red.

[BSK-1 electronic switch compensator and KSR-1 and KSRM-1 electronic computer compensators for electric prospecting]
Elektronnais elektrorasvedochnai. apparatura ESK-1, KSR-1
i KSRM-1. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po geol.
i okhrane nedr, 1959. 103 p. (MIRA 13:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metodiki i tekhniki razvedki (VITR) (for Veshev, Baricnov, Fokin). 2. Institut mashinovedeniya i avtomatiki (IMA) AN USSR (for Misyuk, Zubov). 3. Osoboye konstruktorskoye byuro Ministerstva geologii i ekhrany nedr SSSR (OKB MOION) (for Chir'yev, Petrov). (Prospecting-Blectronic equipment)

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AUTHORS: Zubov, V. G. and Mizyuk, L. Ya.

TITLE:

Computing autocompensator KCR-M(KSR-M)

PERIODICAL:

Referativnyy zhurnal, Geofizika, no. 6, 1962, 34, abstract 6A253 (Byul. nauchno-tekhn. inform. M-vo geol. i okhrany nedr SSSR, no. 4 (21), 1959, 37-40)

TEXT: A computing compensator intended for fulfilling division and multiplication operations is described. The device solves equations for the calculation of the impedance (in the range 0.01 - 107 ohms) and the reduced gradient (in the range 1 - 1000 mv), the measurement range of the values being thereby varied and controlled automatically. The use of the same variable resistance as the converting unit throughout the measurement range is a peculiarity of the layout; this allows the instrument's communications circuit to be simplified. / Abstracter's note: Complete translation. /

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s/651/61/000/005/008/009 D209/D303

AUTHORS:

L.Ya. Mizyuk, and V.G. Zubov

TITLE:

Compact transistorized high speed automatic recorder

SOURCE:

Akademiya nauk Ukrayins'koyi RSR. Instytut mashynoznavstva i avtomayky, L'viv. Avtomaticheskiy kontrol' i iz-

meritel'naya tekhnika. No. 5, Kiev, 1961, 135 - 141

This paper describes the design and construction of a compact high speed instrument, suitable for recording rapidly changing parameters. The factors that govern the speed of response of the instrument are enumerated. In order to conform with the analytical requirements for optimum operation, all the moving parts are made of light materials: ball bearings are used in the pen carriage. The instrument operates at 400 cycles. A 1-watt, 2-phase servomotor with a hollow rotor is used. The synchronous speed reaches 18000 r.p.m. Thus high reduction ratio in the gear train can be used which decreases the moment of inertia of the load applied to the shaft. The circuit diagram of the system

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Compact transistorized

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is shown. The speed of response depends largely on the reduction gear. The optimum gear ratio for the above instrument was found empirically. The gears have an involute profile. The error signal is converted to 400 cycles by means of a transistor chopper operated by a 400 cycle power oscillator. The residual voltage of the converter with matched transistors does not exceed 20 - 25 \ V. The gain of the amplifier is around 250,000, threshold sensitivity of the order of 2044 v. The circuit is described in detail. In order to furnish the instrument with the required dynamic characteristic (degree of overshoot and magnitude of error in a given range) an elastic negative feedback is added. This increases the damping. This method is superior to that using a tachogenerator since it eliminates blacklash and need for phasing. The chart has a spring drive. The operation is stable in the temperature range of 0 - 40°C. The span is 0 - 20 mV; the basic error of measurement and recording is not greater than 1% of the span; speed of response < 0.2 sec. with a chart 105 mm wide. Power is obtained from a 6 volt accumulator or 400 cycle mains. The instrument can be fixed or portable. It can be used with a number of measuring points inserted periodically into the same recorder.

Compact transistorized ...

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is shown. The speed of response depends largely on the reduction gear. The optimum gear ratio for the above instrument was found empirically. The gears have an involute profile. The error signal is converted to 400 cycles by means of a transistor chopper operated by a 400 cycle power oscillator. The residual voltage of the converter with matched transistors does not exceed 20 - 25 \ V. The gain of the amplifier is around 250,000, threshold sensitivity of the order of 2044. The circuit is described in detail. In order to furnish the instrument with the required dynamic characteristic (degree of overshoot and magnitude of error in a given range) an elastic negative feedback is added. This increases the damping. This method is superior to that using a tachogenerator since it eliminates blacklash and need for phasing. The chart has a spring drive. The operation is stable in the temperature range of $0-40^{\circ}$ C. The span is 0 - 20 pt; the basic error of measurement and recording is not greater than 1% of the span; speed of response < 0.2 sec. with a chart 105 mm wide. Power is obtained from a 6 volt accumulator or 400 cycle mains. The instrument can be fixed or portable. It can be used with a number of measuring points inserted periodically into the same recorder.

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Compact transistorized ...

There are 4 figures, 1 table and 8 references: 7 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: J. Najork, Transistorized supply for mobile radio, Radio and TV news, September 1957 p. 56 - 57.

SUBMITTED:

October 1, 1960

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